CCDC ARL South Newsletter

Message from Heidi Maupin, ARL South Region Lead:

Howdy from ARL South! So much has happened the past six months since our March 2020 Newsletter. We have overcome the challenges that we faced when we transformed into a completely virtual workforce, and have turned these challenges into advantages. We were able to geographically extend our inaugural Science, Technology, Engineering, and Math (STEM) Gains in the Education of Math and Sciences (GEMS) summer camp to high school students throughout the country. We learned a lot through the process, and we saw advantages we hadn't imagined through virtual learning, so much so that we plan to hold at least one virtual GEMS event each year to reach out to rural communities.

Some of our researchers had access to university labs and were able to continue their Army research, while others took this opportunity to work from home, summarizing data into written documents submitted for publication. Our new normal: masks, social distancing, and courtesy "air" hand-shakes through peace signs, pretend fist bumps, and hand to heart gestures. We are indeed a People that adapt and succeed in any environment.

Our September Newsletter takes us to the end of the 2020 fiscal year, proudly sharing stories about our student interns, our research results and publications, and virtual events that we were able to participate in. We continue to strive towards our goal to operationalize science and achieve transformational overmatch for our Army!

Hooah!

**SEPTEMBER
Issue 4 FY 2020**

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ARL South Leadership Team

- Heidi Maupin
Region Lead, ARL South

- Shannon Strank
Joint Faculty Appointment

- Corine Romero
Management Assistant

Personnel

- 35 ARL Civilian Researchers

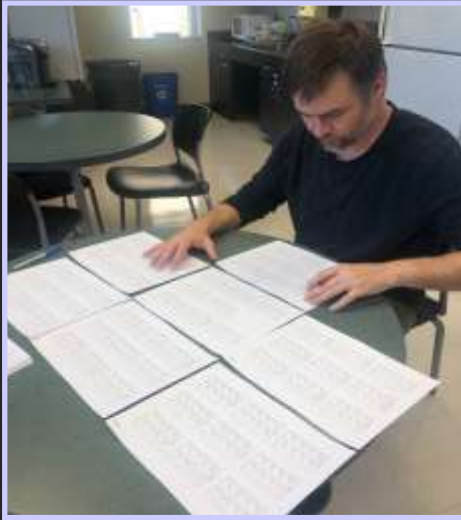- 80 Supporting Researchers and Students

- 17 Partner Universities

Contact

- For further information contact us at:

- ARLSouth@arl.army.mil

Research Continues Among Pandemic

Dr. Jimmy Gollihar (SEDD/ARL South/UT Austin) pours over data

One of the upsides to working in research while under lockdown order is that we have time to analyze and document the results of our "lab labors." We have been taking advantage of this new ample opportunity to review our data and publish our findings. Click here to view our publication list.

1 Patent Application

1 Book Chapter

2 Technical Reports

20 Journal Articles
(16 accepted, 4 in review)

19 Conference Proceedings
(13 accepted, 6 in review)

Design Tool Developed for in-Flight Morphing Air Vehicles

Dr. Francis Phillips (VTD/ARL South/TAMU) and his team reached a significant milestone in their two year research endeavor. The team developed a design tool for an aircraft that will be able to optimize its performance through different phases of flight. Still in its early stages, success of their promising research will have a direct impact on the ability to additively manufacture affordable, customized, mission-specific vehicles for the Warfighter.

"Consider a drone mission where the vehicle needs to get quickly to station, or dash, and then attempt to stay on station for as long as possible, or loiter. During dash segments, short wings are desirable in order to go fast and be more maneuverable, but for loiter segments, long wings are desirable in order to enable low power, high endurance flight. Our tool enables the structural autonomous optimization of a vehicle capable of such morphing."

Dr. Phillips presented this work at the virtual American Institute of Aeronautics and Astronautics Aviation Forum and Exposition event on June 16, 2020. The paper, Uncoupled Method for Massively Parallelizable 3-D Fluid Structure Interaction Analysis and Design was co-authored by ARL's Drs. Todd Henry and John Hrynuk, and TAMU's Trent White, William Scholten, and Dr. Darren Hartl.

Dr. Francis Phillips
VTD/ARL South/TAMU

Contact: Francis Phillips

ARL South Scientist Contributes to Approved Convalescent Plasma Treatment for COVID-19

During the last week of August 2020, the U.S. Food and Drug Administration announced emergency authorization to treat COVID-19 inflicted patients with convalescent plasma. Dr. Jimmy Gollihar (Sensors and Electron Devices Directorate/ARL South/University of Texas at Austin) and his team directly contributed to this successful outcome, giving further promise to a method to combat the virus. Dr. Gollihar's team supported the development and first demonstrated use of the treatment method with Houston Methodist Hospital in March 2020, and through follow-on collaboration with the hospital determined that the optimal window to donate convalescent plasma for use in immunotherapy is within the first 60 days of symptom onset.
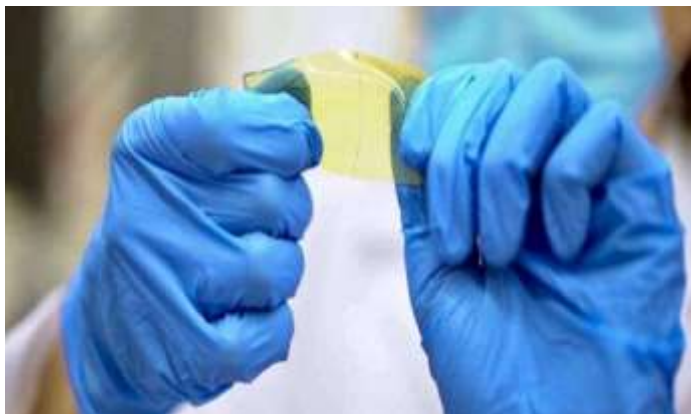
Given the sense of urgency to find an effective treatment for COVID-19, Dr. Gollihar was one of only a few researchers given access to the laboratory at UT Austin, where he uses unique equipment to fervently develop a synthetic biology-based approach to a neutralizing antibody therapy.
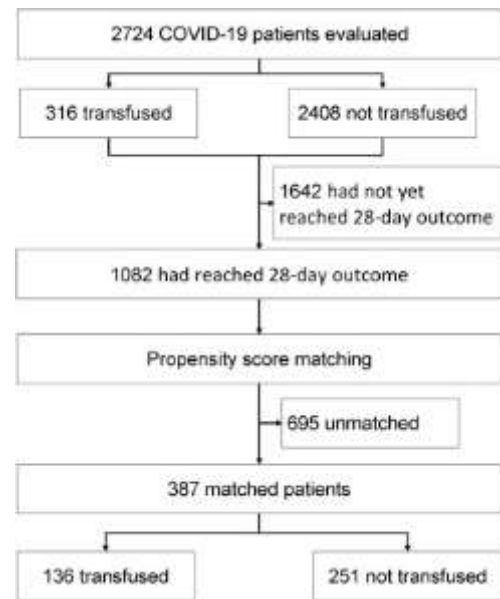
Contact: Jimmy Gollihar

Autonomous Self-Healing Material Developed

ARL and TAMU researchers see potential in synthetic materials for future applications in realistic prosthetic limbs, self-healing helicopter blades and morphing drones. (Photo Courtesy Texas A&M University)

Through his collaboration with TAMU, Dr. Frank Gardea (VTD/ARL South/TAMU) developed a material that can "heal autonomously." The 3-D printable and stimuli-responsive polymeric could potentially be used for morphing drones and robotic platforms.

As the research matures, the epoxy material is expected to have the ability for massive reconfigurability and have embedded intelligence allowing it to autonomously adapt to its environment without any external control. Currently, the stimulus this material responds to is temperature, which researchers first selected because of its ease of use during laboratory testing. Dr. Gardea published his discovery phase research in the peer-reviewed journal Advanced Functional Materials.

Contact: Frank Gardea

Workshop On Interactive Robot Learning Features ARL/UT Austin Collaborative Research

On June 5, 2020, Dr. Garrett Warnell presented an invited talk at the 2020 IEEE Conference on Robotics and Automation Workshop on Interactive Robot Learning. The goal of the workshop was to bring together researchers studying interactive machine learning techniques for robotics systems to discuss recent advances in the area and different perspectives on the problem. In his talk titled "Learning Robot Behaviors from Other Agents," Dr. Warnell described recent joint work with partners at UT Austin on developing machine learning techniques that can allow robots to learn new behaviors by observing a human demonstrate that behavior.

Contact: Garrett Warnell

Learning Robot Behaviors from Other Agents

Garrett Warnell[1] and Peter Stone[2]

[1]Army Research Laboratory
[2]The University of Texas at Austin

Click on the picture to see the presentation!

ARL South Hosts Inaugural Virtual Summer Camp

On June 22-26, rising 9th, 10th, and 11th grade students from around the country joined ARL South to learn about the role technology plays in Army Operations. During the week, the 21 students were guided by near peer mentors and subject matter experts to program autonomous miniature vehicles using the programming language Python.

The ARL South Team utilized the Army Education Opportunity Program's (AEOP's) Gains in the Education of Math and Sciences (GEMS) to groom high school aged students interested in pursuing Science, Technology, Engineering, and Math (STEM) fields. AEOP's GEMS program is focused on bringing middle-school or high school students together in a face-to-face environment, where they can meet with Army research mentors, subject matter experts, and each other, building relationships while they learn the importance of STEM careers.

The ARL South team originally planned to hold the event as a more traditional face-to-face STEM camp. In March, as the country started shutting down in response to the presence of COVID-19, the team realized that in-person events would start to become a thing of the past. The ARL South team quickly pivoted direction with the help of partners RevisionEd, an Austin based company

that helps existing educational programs supplement their curricula with STEM, towards a virtual yet still hands-on experience. The virtual ARL South GEMS event was the first virtual GEMS event ever held of its kind at ARL. It presented a new opportunity to reach out to talented students regardless of their geographical location. Other teams at ARL followed suit and nine more virtual ARL GEMS events were held following the ARL South event.

Guest speakers from the Army Futures Command (AFC) Commander's Action Group (CAG), Army Applications Laboratory, and Army Research Laboratory took part in the program's lunch time speaker series to explain the soldier-technology connection. By the end of the week, the students learned how to program an autonomous vehicle to drive around obstacles, make music, identify hazards, rescue civilians in an emergency scenario, and drive around a "Smart City" that virtually connected one student's part of the city to another's.

The ARL South GEMS team plans to expand its program in 2021 by adding more face to face events and focusing on building diversity for STEM fields. They also plan to provide at least one virtual event that will tap into talent in remote, rural areas.
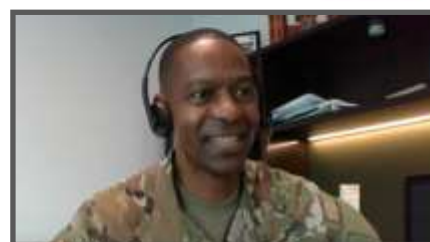
Army Futures Command's CSM Michael A. Crosby delivered a motivating message to kick off the final presentation portion of the program.

ARL Director, Dr. Patrick Baker, welcomed students on the first day and led a strong "Hooah!" as the program concluded on June 26, 2020.

Carson Seiber, an 11th grade student from Austin, TX, won the "Most Innovative Award" for the "Smart City" challenge. That video can be seen here!

Link to our ARL South Special Edition Newsletter that highlights all of the participants in the event!

Contact: Corine Romero

ARL and the University of Texas at El Paso Host Virtual Cybersecurity Summer Hackathon 2020

On July 10, 2020, Dr. Jaime Acosta (CCDC-ARL/CISD/ARL S UTEP) hosted the ARL South Cybersecurity Summer Hackathon 2020, in collaboration with the University of Texas at El Paso Computer Science Department. More than 48 faculty, staff, and students engaged in the remote virtual event to develop intrusion detection system rules that can be used to protect systems against adversaries and malware. Several novel and collaboratively developed technologies between ARL and UTEP, through the ARL South partnership, made this event possible.

The Collaborative Innovation Testbed facilitates the creation and management of remote connections and browser-accessible computing and network environments. The Evaluator-Centric and Extensible Logger (ECELd) data annotation system allows users to label cybersecurity network data and then to automatically generate intrusion detection rules using an intuitive graphical interface.

Participating teams completed several exercises, including a training session, a story-mode, and side-quest mode during the event. The participants' innovative solutions from this event led to rapidly developed previously non-existent detection rules and improvements to the collaboratively developed tools.
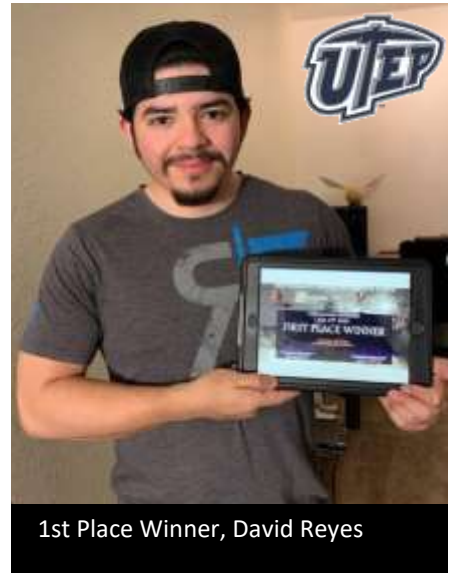
1st Place Winner, David Reyes

Contact: Jaime Acosta

Fed Tech Supernova: Innovation Combine Challenge

On July 14-15, 2020, eager companies had their chance to prove that they have what it takes to disrupt the future of Army technology during the xTechSearch sponsored Fed Tech Supernova: Innovation Combine Challenge. Heidi Maupin (ARL South), David Crist (Associate Director, ARL Office of Small Business) and other ARL representatives were given the chance to meet with the companies during a special virtual session. The companies learned about possible mechanisms to engage with the Army, and in some cases were matched with applicable Army research and development personnel to further assess technologies.

For more information contact: Kevin Landtroop

Click on the image for event footage!

https://www.arl.army.mil/xtechsearch/competitions/innovation-combine.html#description

A Tribute to ARL South Researcher, Dr. Valerie Rice

ARL South bids a fond farewell to Dr. Valerie Rice, who retired after 17 years from civilian service on August 31, 2020. Dr. Rice led her team as they investigated resilience and mindfulness techniques to improve soldier performance. Dr. Rice's team built an international reputation of expertise in this area, and proved that Soldiers participating in an effective mindfulness program will increase resilience, improve awareness, and decrease the effects of post-traumatic stress disorder and adult deficit hyperactivity disorder. Dr. Rice and her team were embedded within the Command Structure at the U.S. Army Medical Center of Excellence, located at Ft. Sam Houston. The team relied on active duty and reservist volunteers to acquire data for their studies. Dr. Rice's team efforts have spanned the past seven years, and also included other interventions including peripheral neuromodulators, sound vibration, audiovisual entertainment, and mind/body meridian-based energy techniques. Prior to her civilian position with ARL, COL Rice retired after serving more than 25 years in active duty. Good luck to Dr. Rice! She has certainly left behind a valuable legacy that will benefit our Soldiers for many years into the future!

Dr. Valerie Rice (far right) teaching students some mindfulness techniques at UT Austin's Girl Day, February 2020.

Contact: Gary Boykin
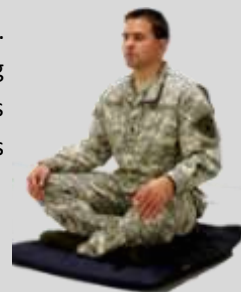
ARL South Summer Student Awarded 2020 Richard Booser Award Recognized for Research with ARL/SEDD

Brilliant students throughout the country work alongside ARL scientists as part of ARL's internship program This opportunity provides students with a fresh perspective to Army research. ARL South SMART student **Kelly Jacques** is learning the benefits of working with Army researchers, and showing tremendous capability with her successful research endeavors.

On February 18th Kelly received the 1st prize in the undergraduate poster competition of the Society of Tribologists and Lubrication Engineers (STLE) North Texas Chapter, for a poster highlighting research conducted in summer 2019 in support of ARL research.

Kelly's winning poster on the "Determination of Method for Tribological Experiment on Ultra-Hard Coatings in Extreme Low-Viscosity Fuels" concentrated on developing tribological methods to quantify material behavior in low viscosity fuels to support robust high-pressure fuel systems for multi-fuel capable engines.

Kelly received the 2020 Richard Booser Award of STLE that encourages undergraduates to pursue graduate degrees in tribology. Kelly (ARL Center for UAS Propulsion (CUP) Fellow) will begin her graduate studies at UNT and will continue conducting research in the ARL South region under the mentorship of Dr. Stephen Berkebile (ARL VTD).

Kelly Jacques standing next to her winning poster at the STLE North Texas Chapter Poster Competition.

Contact: Stephen Berkebile

ARL South Expands to Florida with Arrival of SEDD Branch Chief

Eric Adler is the Antennae and Radio Frequency (RF) Sensor Branch Chief within CCDC ARL Sensor and Electron Devices Directorate (SEDD). Through the Open Campus model, Eric was able to move to Jacksonville, FL to be closer to his son. With this opportunity, one of Eric's goals is to expand Army RF opportunities with all the Florida Universities that have a vested interest in RF sensor concepts or RF component innovations. With the continued enhancements of RF sensors using software defined field programmable gate arrays, multifunction RF adaptability is becoming readily available for operating in our highly contested and congested spectral environment. By adding another modality to the ARL South community, Eric would like to extend his interest within the R.E.D. division which includes RF Sensing/Radar, Electronic Warfare, and Directed Energy (High Energy Lasers & High Power Microwaves) to the existing University partners at ARL South.

POC: Eric Adler

Dr. Raghav Shroff is a research biologist with ARL/SEDD in Austin, Texas interested in solving complex biological problems with data and machine learning. Prior to joining ARL in July 2020, he received his Bachelor of Science in Bioengineering from Rice University before continuing on to get his PhD from UT Austin in molecular biology. Raghav's research sits at the intersection of synthetic biology, protein engineering, and computational design, leveraging novel data driven tools to better engineer biology. At ARL-South, Raghav will utilize his expertise to strengthen the ongoing effort to scale biology in the realm of novel biomaterials, bioremediation of plastics, and rapid response therapeutics.

Contact Raghav Shroff

Dr. Daniel Boutz (ARL South/SEDD/UT Austin) is a research biologist specializing in proteomics. He received a B.A. in Biochemistry and Cellular Biology at Rice University and Ph.D. in Molecular Biology at UCLA. For the past 14 years, he has cultivated his expertise in proteomics at the Center for Systems and Synthetic Biology at UT Austin. Joining ARL South in August 2020, Dan's research focuses on utilizing mass spectrometry-based proteomics and metabolomics to characterize any biological systems and biomaterials of interest to ARL labs. He is particularly interested in developing workflows for high-throughput profiling of protein expression and metabolite abundance to identify the direct and indirect effects of engineered pathways on cells and provide guidance for improved design.

Contact Daniel Boutz

Sue Toth is the Team Leader for the Concept Development Team, Technology Integration Branch, Signals and Image Processing Division, within CISD. She received her BA in History from the University of Texas at Austin in 1986, and was commissioned out of the Navy Reserve Officers Training Corps. In 1994 she received a JD (Cum Laude) from the University of Notre Dame. Sue has been with ARL since 2009. In 2016 she retired as a Navy Captain after 29 years of active and reserve service. Sue's focus is on coalition interoperability and supporting ARL's Artificial Intelligence Innovation Institute. She is the Chair of NATO SET-256 focused on interoperability at the tactical edge. She is a capability pillar lead for The Technical Cooperation Program's (TTCP) Artificial Intelligence Strategic Challenge's pillar focused on Tailored AI at the Tactical Edge (TATE). Sue and her team have participated in the last three TTCP Contested Urban Environment experiments. In addition to working on coalition problem sets, Sue and the Concept Development Team support field experiments, advise researchers on military utility, and work with researchers to transition technology to the end user. Sue moved to Austin in July 2020, and will be able to conduct her research from Austin, leveraging local opportunity available with UT Austin and AFC.

Contact Sue Toth

The ARL South 2019 Summer ROTC Cadets with Honorable Jim McPherson, Acting Under Secretary of the Army and Vice Chief of Staff of the Army, Gen. Joseph Martin.

Meet Our ARL South Students

ARL has several programs and opportunities for the brightest students in the nation, from summer internships to long term programs, that can ultimately result in permanent civilian positions within the Department of Defense. Regardless of which program a student belongs to, each of our students receive the opportunity to engage with scientific experts, and all are challenged to consider the unique technological problems of the warfighter experience. On the next few pages, we introduce some of our talented students currently working with ARL South researchers on Army technical solutions. We couldn't be happier to welcome each one to our ARL South family.

Howdy! My name is **Stephanie Pestka** and I'm originally from southern New Hampshire. I received my bachelor's degree in Materials Science and Engineering from Virginia Tech. I am currently a second year Ph.D student in the Materials Science and Engineering department at Texas A&M University. I joined the ARL South group this summer as an intern and have been working on additive manufacturing of titanium and stainless steel alongside Drs. Brady Butler and James Paramore. During the school year, my research focuses on laser powder bed fusion of 17-4 PH SS and nickel-titanium shape memory alloys with applications in the biomedical industry.

My name is **Ion Powell**, I am from Houston, TX and I am a Junior at Texas A&M. My passion for materials science drove me to join ARL South at the beginning of Summer 2019 as an AEOP Fellow. Research has become an important part of my life; I have special interest in corrosion and thermodynamic processes and I hope to pursue a PhD in the future. Working at ARL has helped me develop my coding and learn important skills for characterization in materials science, with the help of my ARL mentors Drs. Brady Butler and James Paramore.

Contact: James Paramore

Meet the Students of ARL South

Howdy! My name is **Laura Moody**, and I am from Dallas, TX. In 2018 I received a B.S. in Mechanical Engineering from Texas A&M University. I am currently pursuing a M.S. in Materials Science in Engineering here in Aggie land. I joined ARL in January 2019 because I was excited to work on cutting-edge technology that would benefit the armed forces as well as the greater scientific community. My ARL mentors are Drs. Brady Butler and James Paramore. My involvement in ARL has allowed me to take part in additive manufacturing, powder metallurgy, and small-scale mechanical behavior research which is of great interest to me. The subject of my master's thesis is the development and validation of sub-scale tensile tests of CP-Ti and Ti-6Al-4V, which I am projected to defend in the fall 2020. I am grateful for every opportunity and learning experience given me by ARL.

Contact: James Paramore

Hello! I'm **Trevor Hastings**. I am originally from Illinois but am currently a Texas TAMU Master's Materials Science student. I received a Bachelor's in Materials Science at the University of Illinois at Urbana-Champaign. My past research experience includes Sol-gel thin film characterization, polymer synthesis, tensile-testing, in-situ melting-point microscopy, and photovoltaic cells. I joined the ARL group in May 2020 for its various opportunities and exciting projects related to 3D printing. I'm currently exploring the characterization of microstructure and modeling of Hydrogen-sintered Titanium samples of various 3D-printed architectures., with the help of my ARL mentors Drs. Brady Butler and James Paramore. Regarding future career opportunities, I'd like to secure a national lab internship. I've also played the violin since I was about 10.

Contact: James Paramore

My name is **Michael Taylor Hurst**. I am currently enrolled in the M.S., Engineering Technology, Program at Texas A&M University. I received a B.S., Magna Cum Laude, in Manufacturing and Mechanical Engineering Technology at Texas A&M University. I began working with ARL South and Drs. James Paramore and Brady Butler on June 1st, 2020. Current research I am performing is to investigate the feasibility of grain refinement of bulk and additive manufactured titanium without the use of mechanical working. Research will also investigate if similarities in mechanical properties can be achieved between bulk and additive manufactured titanium components.

I have always wanted to pursue a career in research and development for the defense industry and that is just one reason I pursued the opportunity to work with ARL.

My name is **Luisana Clarke** and I am a Scholarship for Service scholar currently conducting cybersecurity research in network-based Moving Target Defense for the Army Research Lab, under the mentorship of Dr. Jaime Acosta (ARL/CISD). After obtaining a bachelor's degree in Linguistics, I sought out to learn more about the world of computing to understand how every-day technologies work. I continued my education and excelled in the field; first I earned my associate's degree in Computer Science and then I transitioned into the graduate program in Software Engineering at the University of Texas at El Paso. I have had the opportunity to work on real cybersecurity issues with the ARL as part of its Open Campus initiative and internship programs. The research experience I have gained has strengthened my knowledge and given me unique skills to prepare me for the workforce. Now more than ever, I aspire to graduate and develop technologies for securing our nation.

Contact: James Paramore

Contact: Jaime Acosta

Meet the Students of ARL South

Daniel Lewis is currently working towards his Ph.D. In Materials Science and Engineering at Texas A&M. He received his B.S. in Manufacturing and Mechanical Engineering Technology from Texas A&M in 2019. During his undergrad, Daniel participated in the thesis-based Research Experience for Undergrads (REU) program while conducting his research on a zirconia and carbon nanotubes composite. This research eventually led him to pursue a doctorate in Materials Science.

Daniel has always been very interested in machines and thoroughly enjoys repairing mechanical devices. His aging, high mileage car has provided him with seemingly boundless opportunity to learn about and practice mechanical repair. He spent some time working as an automotive mechanic, furthering his knowledge on the subject.

Upon being accepted into the Ph.D. program, he found that his hands-on experience and interest in materials made him a viable candidate for a graduate research position at the Texas A&M ARL South metals group. After being accepted into the group with Drs. James Paramore and Brady Butler, and overcoming his overwhelming joy at that, he worked to design a high-vacuum tube furnace catered to utilizing the Hydrogen Sintering and Phase Transformation (HSPT) process for refining titanium microstructures. His dissertation is focused on examining the formation behavior of β grains in titanium during the HSPT process and he plans to graduate around 2024. His future plans are currently unsure, but he certainly wouldn't mind continuing to work inside a research laboratory.

My name is **Stephanie Medina**. I earned my bachelor's degree in Computer Science in 2018 and immediately afterwards, I was ready to continue my education and pursue my lifelong interests in cybersecurity. I am currently a Scholarship for Service (SFS) scholar enrolled in the Software Engineering Secure Cyber Systems Track program at the University of Texas at El Paso. I will receive my master's degree this upcoming Fall.

During my time as a graduate student, I have worked with the Army Research Lab; constantly developing and expanding my cybersecurity skills and contributing to science and to the Army. Some of the projects I have worked on include Moving Target Defense and Network Data Curation. These programs have given me unique opportunities and experiences that I know will help me reach my ultimate goal and dream of working for the government and keeping America secure by doing what I enjoy and love.

TEXAS A&M
UNIVERSITY.

UTEP

Contact: James Paramore

Contact: Jaime Acosta

Braydon Westmoreland was recently appointed to work on a research project through the ORAU program, investigating how artificial intelligence (AI) and machine learning (ML) can be used to modify the trade space parameters of semiconductor power modules in real-time. Mr. Westmoreland is currently a graduate student at Texas Tech University (TTU) where the research is taking place un-der the supervision of Dr. Argenis Bilbao (ARL South/SEDD/TTU). Through computer simulation results Mr. Westmoreland determined that Reinforcement Learning (RL) can modify a damaged module's electrical parameters to normalize its operation. These results suggest that power electronic systems operating in the field can be made more rugged and autonomously able to adapt to operating conditions that they were not designed for. In conjunction with Dr. Bilbao he started to mentor a new ARL South Undergraduate Research Assistant, Mr. David Graves, to bring him up to speed in AI/ML and its applications.

Contact: Argenis Bilbao
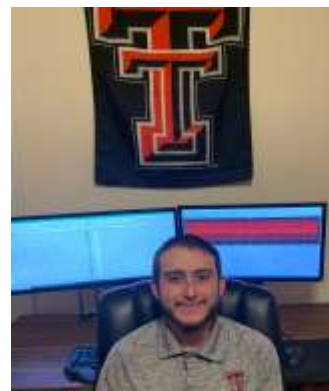
David Graves will use his new knowledge in AI/ML to develop a new method of foreign object detection for wireless power transfer systems (WPT) which promises to improve their specific power density. Mr. Graves's work is part of ARL's research portfolio in the Seamless Power Offloading Technology Area.

STEM OPPORTUNITIES

These are a few of the STEM opportunities available for students ranging from Middle school through College.

DOD HBCU/MI Summer Program

DoD HBCU/MI student program affords participants the opportunity to work side by side with DoD scientists and engineers in state of-the-art research facilities while observing and implementing concepts from their course work. The DoD Summer Program is open to applicants meeting all the following requirements:

o Enrolled in or recent graduate of a HBCU/MI (within past six months)
o Science, Technology, Engineering, or Math (STEM) majors
o U.S. Citizens

Application Deadline TBD

Science and Engineering Apprenticeship Program (SEAP)

Directorate Funded; SEAP matches practicing DoD scientists with talented high school students creating a direct mentor-student relationship that provides students with training that is unparalleled at most high schools. SEAP fosters desire in its participants to pursue further training and careers in STEM. This program is open to students meeting all the following requirements:

o Enrolled in the 10th, 11th, or 12th grade
o 16 years old at time of apprenticeship
o U.S. Citizens or Permanent legal resident

Application Deadline: February 28, 2021

DOD HBCU Center Of Excellence (COE)

DOD HBCU/MI Center of Excellence (COE) summer program affords OSD COE scholars the opportunity to work side by side with DoD scientists and engineers in state of-the-art research facilities while observing and implementing concepts from their course work. The DOD HBCU/MI COE Summer Program is open to applicants meeting all the following requirements:

o Enrolled students or recent graduates of an DOD HBCU/MI COE (within past six months)
o Major in a Science, Technology, Engineering, or Mathematics (STEM) discipline
o U.S. Citizens

FY21 Deadline TBD

Summer Student Experience (SSE)

SSE provides opportunities for select scientists, engineers and students to engage in their choice of research problems that contribute to ARL research efforts. SSE is open to applicants meeting all the following requirements:

o Enrolled students or recent graduates (within past five years)
o Science, Technology, Engineering, or Mathematics (STEM) majors
o U.S. Citizens or U.S. permanent legal residents. A foreign candidate may also be considered on a case by case basis.

Application Deadline: February 28, 2021

College Qualified Leaders (CQL)

CQL fosters desire in its participants to pursue further training and careers in STEM. CQL students receive firsthand research experience and exposure to DoD laboratories. CQL is open to students meeting all the following

o Enrolled undergraduate students or recent graduates (within past six months)
o Science, Technology, Engineering, or Mathematics (STEM) majors
o U.S. Citizens or U.S. permanent legal residents.

Application Deadline: February 28, 2021

ROTC Summer Program

Supported by Cadet Command; The ROTC Program is a summer leadership enrichment program for ROTC college students. ROTC students are eligible to receive cadet pay based on academic and military rank. Pay, transportation and housing resources are provided by cadet command.

o Enrolled in ROTC
o Any major

For more information contact:
Patrice Collins

Application Deadline: February 28, 2021

Working from home has taken some time to get used to. At the beginning there were the VPN issues, the pajamas, the uncertainty. We've come a long way since then. Research continues to progress. Pets are happy to see us every day...all day long. People everywhere are embracing their home offices and communicating more than ever with the adoption of MS Teams. There have been challenges and the experience has undoubtedly been different for everyone but overall we are happy to be thriving together from a safe distance.

Jimmy Gollihar basically lives in the lab at UT Austin, developing solutions to counter COVID-19 effects.

Shannon Strank loving every minute she gets to spend with her horses.

WORKING FROM HOME

SGM Carmona practiced safe distancing during his quick visit to see our ARL South space while making plans for the Army 10 Miler (ATM) at the UT Austin, JJ Pickle Research Campus, tentatively scheduled for October 18, 2020.

The ARL South Christmas Party just grew by four! Welcome to the world, babies!

Elodie Ann, daughter to Laura Marusich Cooper (CCDC ARL HRED/ARL South/UT Dallas)

Edythe Elizabeth, daughter to Brady Butler (CCDC ARL WMRD/ARL South/TAMU)

Greta, daughter to Garrett Warnell (CCDC ARL CISD/ARL South/UT Austin)

Cyrus, son to Ben Cerjan (ARL South/Rice University)

New Co-workers

Argenis Bilbao has been able to safely perform a few home-approved activities from his garage laboratory.

Eric Adler working from his home office in Florida.

Ray Bateman taking a stroll during his lunch break.

Heidi Maupin's cat, A.B. (left) loves wet food and attending ARL meetings. Corine's cat, Ella (right) loves taking notes.

ACRONYM RELIEF

- CCDC Aviation & Missile Center, formerly Aviation & Missile Research, Development and Engineering Center (AMRDEC)

- CCDC Army Research Laboratory, formerly Army Research Laboratory

- Combat Capabilities Development Command (CCDC) Soldier Center, formerly Natick Soldier Research, Development and Engineering Center (NSRDEC)

- CCDC Data & Analysis Center, formerly Army Material Systems Analysis (AMSAA), Survivability/Lethality Analysis Directorate (SLAD), Human Systems Integration (HSI)

- CCDC Data & Analysis Center, formerly Army Material Systems Analysis (AMSAA), Survivability/Lethality Analysis Directorate (SLAD), Human Systems Integration (HSI)

- CCDC Ground Vehicle Systems Center, formerly Tank Automotive Research Development and Engineering Center (TARDEC)

- CCDC Armaments Center, formerly Armament Research, Development and Engineering Center (ARDEC)

- CCDC Control, Communications, Computers, Combat Systems, Intelligence, Surveillance, and Reconnaissance (C5ISR), formerly Communications Electronics Research Development and Engineering Center (CERDEC)

- CCDC Chemical Biological Center, formerly Edgewood Chemical Biological Center (ECBC)

- ARL/CISD- Computational & Information Sciences Directorate

- ARL/HRED- Human Research & Engineering Directorate

- ARL/SEDD- Sensors & Electron Devices Directorate

- ·ARL/VTD- Vehicle Technology Directorate

- ARL/WMRD- Weapons & Materials Research Directorate

- ARO- Army Research Office

- GEMS– Gains in the Education of Math and Science

- STEM– Science, Technology, Engineering, and Mathematics

- AEOP– Army Education Outreach Program